Pharmaceutical Company Optimizes Application Performance on Cisco UCS

Executive Summary

- **Customer Name:** Purdue Pharma L.P.
- **Industry:** Pharmaceuticals
- **Location:** Stamford, Connecticut
- **Number of Employees:** 1750

Challenge
- Reduce data center technology maintenance and licensing costs
- Improve performance of key enterprise applications
- Increase visibility across support tiers to optimize performance

Solution
- Deployed converged Vblock infrastructure to reduce data center footprint and maintenance
- Standardized on Cisco Unified Computing Systems (UCS) solutions for performance
- Implemented ExtraHop wire data analytics platform to monitor and optimize application performance

Results
- Reduced footprint by 70 percent
- Improved application response time by 70 percent
- Improved IT team productivity

Technology Partner
- ExtraHop

Purdue Pharma deployed Vblock infrastructure with Cisco UCS and ExtraHop to streamline data center infrastructure.

Challenge

Founded by physicians more than 60 years ago, Purdue Pharma is committed to improving patients' lives in meaningful ways. Distinguished by pioneering research, products, and medical programs directed toward alleviating pain, Purdue works with highly skilled teams who bring integrity and accountability to both research and manufacturing processes.

Numerous enterprise applications, including SAP software, Oracle databases, and Microsoft SharePoint, support Purdue's complex operations. Running all of these applications requires a large and high-performance infrastructure, but management of the data center grew costly as Purdue's capacity needs continued to expand. Chief Technology Officer Stephen Rayda saw an opportunity to reduce the footprint, as well as lower data center technology maintenance and licensing costs, by migrating to a virtualized environment.

The Vblock System, which cohesively integrates best-in-class compute, network, and storage technologies from Cisco, EMC, and VMware, was an ideal solution for Purdue's goals. As a validated, converged infrastructure, Vblock requires less management, while quick deployment makes it easy to meet the business's growing needs. The Cisco® Unified Data Center components, including Cisco Unified Computing System™ (UCS®) blade servers and Cisco Nexus® switches, were a particularly good fit for the company due to its flexibility and performance in virtual environments.

To provide visibility into the highly dynamic Vblock environment, Purdue deployed an ExtraHop appliance, a Cisco compatible product that passively analyzes real-time wire data: all L2-L7 communications between systems, including full bidirectional transaction payloads. With correlated visibility across network, web, database, directory services, and storage tiers, IT staff gain operational intelligence that helps them improve troubleshooting

and optimization on the environment. "Vblock and Cisco UCS deliver a high-performance virtual infrastructure that has dramatically streamlined and simplified our IT environment," says Rayda. "With ExtraHop deployed for Cisco UCS, we're seeing unprecedented visibility across tiers that helps us get the most out of Vblock."

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> CTO
> Purdue Pharma

Solution

Working with VCE, Purdue deployed converged Vblock infrastructure in its data centers. The core compute uses seven chassis filled with 32 Cisco UCS B230 M2 Blade Servers at the head office data center in Stamford. In addition to capacity and density that deliver outstanding performance in virtual environments, Cisco UCS Blade Servers offer excellent scalability. Networking fabric and power connect to the chassis, not each individual blades, which means that adding or replacing a server is as simple as plugging a new blade into the chassis slot.

VCE manages deployment and configurations for Purdue, and the management available with Cisco UCS Manager enables VCE to deliver fast scalability through robust templates and profiles. "Once a profile is set, VCE simply plugs in a blade server and lets Cisco UCS Manager handle all configurations within minutes," says Jagadeesh Narasimhaiah, IT lead at Purdue Pharma. "This enables us to expand capacity as needed to keep up with growth."

Cisco Unified Fabric connects the Cisco UCS blade servers and EMC storage with high availability networks. Cisco UCS 6140 Fabric Interconnects connect the Cisco UCS blade servers to the Cisco Nexus 5000 Series Switches on the access layer. With unified ports and high connectivity, the Cisco Nexus 5000 Series Switches complement Vblock by encouraging tight integration between compute, storage, and networking components. Cisco Nexus 7000 Series Switches act as the core of the Purdue network, while Cisco Nexus 1000V Series Switches bring network connections from the physical to the virtual layer.

As a tested and integrated system, Vblock is easy to manage and scale with little of the testing and complex configurations required for traditional systems. While Cisco UCS Manager provides excellent infrastructure management and resource-utilization monitoring for all components, Purdue went a step further by implementing the ExtraHop wire data analytics platform. Passively analyzing a copy of all traffic from Vblock, ExtraHop requires no agents for its deployment and can automatically adjust to changes in the environment. With this up-to-date, real-time view, the Purdue IT team gains operational intelligence that enables them to be proactive and solve problems fast.

During the proof of concept, information gained from ExtraHop helped IT staff to resolve an ongoing performance issue at Purdue. "ExtraHop and Cisco UCS work together extremely well," says Narasimhaiah. "ExtraHop helps us establish a baseline of application performance improvements in Cisco UCS virtual environments and pinpoint areas that we can optimize to get the most out of our infrastructure."

Results

By migrating data centers to the converged Vblock environment, Purdue has reduced the 10,000 square-foot data center to only 3,000 square feet, which still includes room to grow. "With the power and support for virtual environments we get from Cisco and Vblock, we're improving application performance even as we consolidate the environment," says Manish Gupta, IT operations manager at Purdue Pharma.

Cisco UCS servers are currently 94 percent virtualized with VMware, and almost all of the company's applications, from SAP databases to electronic document compliance

software, run on these virtual environments. Through active virtualization and rightsizing, Purdue continues to reduce the footprint even further while reducing operational and capital expenditures.

After virtualizing the servers used for non-SAP Oracle databases, the IT team successfully consolidated 12 blade servers to 8, a savings of 30 percent. The four extra blade servers were repurposed elsewhere in the data center, eliminating the need for Purdue to invest in additional hardware. Based on initial results, the IT team also anticipates a potential reduction in the SAP landscape of up to 50 percent once virtualization and rightsizing are complete.

Deploying ExtraHop for the Vblock environment brings a whole new level of visibility, making it faster and easier to pinpoint problems. If backups slowed down on a server, Purdue previously had no way of knowing what information was getting through. Every IT team had their own tools to monitor different aspects of the environment, and when there was a serious problem, teams would come together and spend hours manually correlating data. With ExtraHop, it only takes minutes for the IT teams to correlate details for all L2-L7 protocol activity for particular clients and servers in real time.

"With other monitoring tools, we couldn't see the big picture," says Gupta. "The ExtraHop platform gives us visibility across tiers and immediate insights with human-readable information so that we spend less time decoding machine-readable information. We can see how applications and servers are performing, and adjust them to maximize efficiency and performance." The straightforward interface makes it simple for any IT employee at Purdue to understand real-time wire data and quickly identify the root cause of problems. With less time spent hunting down issues, employees have more time to refine designs and optimize systems.

In one case, ExtraHop informed Purdue that a database, which appeared to be running smoothly, was actually responding to client requests with millions of errors each day. Armed with the SQL queries that were causing those errors, which were readily apparent in ExtraHop, the application owner was able start working on a solution that would prevent future errors and performance issues. ExtraHop also helps Purdue identify legacy systems that can be decommissioned or identify unauthorized access to sensitive file servers or databases from a user or other systems. "The Application Activity Maps in ExtraHop are particularly helpful to gain a visual, up-to-the-minute overview of activity and how all our systems are connected," says Narasimhaiah.

Product List

Vblock
· Cisco Unified Computing System (UCS)
· Cisco UCS B230 M2 Blade Servers
· EMC storage
· VMware

Routing and Switching
· Cisco Nexus 7000 Series Switches
· Cisco Nexus 5000 Series Switches
· Cisco Nexus 1000V Series Switches

Fabric Interconnects
· Cisco UCS 6140 Fabric Interconnects

Network Management
· Cisco UCS Manager

Monitoring
· ExtraHop wire data analytics platform

Applications
· SAP
· Oracle
· Microsoft SharePoint
· TrackWise

For More Information

To find out more about Cisco UCS, please visit: www.cisco.com/go/ucs.
To find out more about Cisco Nexus, please visit: www.cisco.com/go/nexus.
To learn more about Vblock, please visit: www.cisco.com/go/vblock.
To learn more about ExtraHop, please visit: www.extrahop.com.
To learn more about the ExtraHop platform for UCS, please visit:
https://marketplace.cisco.com/catalog/companies/extrahop-networks.

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